

1 WE CLAIM:

2 1. A computer game comprising: ✓
3 a map database containing data that represent roads in a geographic locale;
4 a user interface;
5 a game engine program that runs on a computer platform and that presents a game
6 to a user via the user interface; and
7 an application programming interface program that runs on the computer
8 platform, accepts requests for data from the game engine program, accesses the data from
9 the map database, and provides the data in a suitable format to the game engine program.

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11 2. The computer game of Claim 1 further comprising:
12 a 3D function that converts geographic data from the map database to a
13 perspective view for display in the computer game.

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15 3. The computer game of Claim 1 further comprising:
16 a smoothing function that determines a curve through data points used in the map
17 database to represent linearly extending features, wherein the curve is used for display of
18 the linearly extending feature in the computer game.

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20 3. The computer game of Claim 1 further comprising:
21 an integration function that combines road model data with data that represent
22 roads from the map database to provide a realistic visual appearance of road-related
23 things.

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25 4. The computer game of Claim 3 wherein the road-related things include at
26 least one selected from a group consisting of: road colors, road pavement, lane stripes,
27 curbs, sidewalks, signs, lampposts, lane dividers, traffic signals, speed bumps, and
28 crosswalks.

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1 5. The computer game of Claim 1 further comprising:
2 an integration function that combines 3D model data with data that represent
3 roads from the map database to provide a realistic visual representation of polygon
4 shaped features in the region.

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6 6. The computer game of Claim 1 further comprising:
7 an integration function that combines 3D model data with data that represent
8 roads from the map database to provide a realistic visual representation of cityscape and
9 landscape features in the region.

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11 7. The computer game of Claim 1 further comprising:
12 an integration function that combines 3D model data with data that represent
13 roads from the map database to provide a realistic visual representation of one of a group
14 consisting of: buildings, fences, trees, shrubbery, lawns, fences, and clouds in the region.

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16 8. The computer game of Claim 1 wherein the application programming
17 interface program provides for spatial queries of data from the map database.

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19 9. The computer game of Claim 1 further comprising:
20 a game application shell that includes basic logic, rules, strategy, and characters
21 for a type of computer game, wherein the game application shell is accessed by the game
22 engine program.

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24 10. The computer game of Claim 9 wherein the type of computer game is
25 selected from a group consisting of: a road rally game, a police chase game, a location
26 quiz game, a “bot” fighter game, a flight simulator game, a “first-person-shooter” game,
27 an auto theft game, and an urban development simulator game.

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1 11. The computer game of Claim 1 wherein the game engine program
2 performs specific tasks and operates on an as-needed basis during game play.

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4 12. The computer game of Claim 1 wherein the game engine program
5 comprises at least one selected from a group consisting of: audio engines, logic engines,
6 rules engines, animation engines, graphics engines, and user interface engines.

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8 13. A method of operating a computer game that runs on a computer platform
9 comprising:

10 using an application programming interface program that runs on the computer
11 platform to accept requests for geographic data from a game engine program,

12 using the application programming interface program to access data from a map
13 database, and

14 using the application programming interface program to provide the data in a
15 suitable format to the game engine program.

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17 14. The method of Claim 13 further comprising:

18 displaying geographic features represented by the data on a display of the
19 computer platform as part of a game play scenario of the computer game.

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21 15. The method of Claim 13 further comprising:

22 converting the geographic data from the map database to a perspective view for
23 display by the computer platform as part of a game play scenario of the computer game.

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25 16. The method of Claim 13 further comprising:

26 determining a curve through data points used in the map database to represent
27 linearly extending features, wherein the curve is used for display of the linearly extending
28 feature by the computer platform as part of a game play scenario of the computer game.

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1 17. The method of Claim 13 further comprising:
2 combining road model data with data that represent roads from the map database
3 to provide a realistic visual appearance of road-related things by the computer platform as
4 part of a game play scenario of the computer game.

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6 18. The method of Claim 17 wherein the road-related things include at least
7 one selected from a group consisting of: road colors, road pavement, lane stripes, curbs,
8 sidewalks, signs, lampposts, lane dividers, traffic signals, speed bumps, and crosswalks.

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10 19. The method of Claim 13 further comprising:
11 combining 3D model data with data that represent roads from the map database to
12 provide a realistic visual representation of polygon shaped features in the region by the
13 computer platform as part of a game play scenario of the computer game.

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15 20. The method of Claim 13 further comprising:
16 combining 3D model data with data that represent roads from the map database to
17 provide a realistic visual representation of cityscape and landscape features in the region
18 by the computer platform as part of a game play scenario of the computer game.

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20 21. The method of Claim 13 further comprising:
21 combining 3D model data with data that represent roads from the map database to
22 provide a realistic visual representation of one of a group consisting of: buildings, fences,
23 trees, shrubbery, lawns, fences, and clouds in the region by the computer platform as part
24 of a game play scenario of the computer game.

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26 22. The method of Claim 13 wherein the application programming interface
27 program provides for spatial queries of data from the map database.

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1 23. The method of Claim 13 further comprising:
2 using the game engine program to access a game application shell that includes
3 basic logic, rules, strategy, and characters for a type of computer game, wherein the game
4 application shell.

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6 24. The method of Claim 23 wherein the type of computer game is selected
7 from a group consisting of: a road rally game, a police chase game, a location quiz game,
8 a “bot” fighter game, a flight simulator game, a “first-person-shooter” game, an auto theft
9 game, and an urban development simulator game.

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11 25. The method of Claim 13 further comprising:
12 using the game engine program to perform specific tasks and operate on an as-
13 needed basis during a game play scenario of the computer game.

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15 26. The method of Claim 13 wherein the game engine program comprises at
16 least one selected from a group consisting of: audio engines, logic engines, rules engines,
17 animation engines, graphics engines, and user interface engines.

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